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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PAK, JOHN D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/722,811	HENSLEY ET AL.	
	Examiner	Art Unit	
	John Pak	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,14,16-19,22,41,43 and 45-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,14,16-19,22,41,43 and 45-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims 11, 14, 16-19, 22, 41 and 43, 45-50 are pending in this application.

All outstanding grounds of rejection under the second paragraph of 35 U.S.C. 112 are hereby withdrawn in view of applicant's amendments and remarks of 4/16/2009. In the third paragraph of page 5 of applicant's 4/16/2009 remarks, applicant no longer takes the position that about 75-99 wt% water is relative to the carrier. In other words, applicant accepts the claim interpretation that said water amount is relative to the final gel composition. It is noted for the record that **the claimed gel composition contains about 75 to about 99 wt% water**, i.e. the claimed "about 75 to about 99 wt % water" feature is not relative to the carrier amount, which would lead to a different water content range.

Applicant's new terminal disclaimer, filed on 4/16/2009, has been reviewed. The terminal disclaimer is not proper with respect to the reference copending applications for the reasons stated below – but it is proper with respect to the U.S. Patent 6,673,835. A paragraph from the terminal disclaimer is reproduced below with markings to explain the problem with respect to the reference copending applications.

Zicam, LLC, is the sole owner of the instant application, the same as the owner of United States Patent No. 6,673,835, and copending Application Nos. 11/781,396; 11/748,668; 11/748,653; and 11/749,111. Zicam, LLC, hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend it beyond the expiration date of the full statutory term defined in 35 U.S.C. §§ 154-156 and 173, as presently shortened by any terminal disclaimer, of prior U.S. Patent No. 6,673,835 and patents that issue on Application Nos. 11/781,396; 11/748,668; 11/748,653; and 11/749,111. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and all of the prior patent(s) and any patents issuing from the prior applications are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

As can be seen from above, the enforceability clause (to enforce only when commonly owned) refers only to prior patent(s) and **prior applications**. The problem with this is that all the copending applications are not prior applications, i.e. they were filed after the filing date of this application so they are not "prior" applications. Applicant is advised to review MPEP 1490 for proper language in an acceptable terminal disclaimer.

Examples of acceptable language for making the disclaimer of the terminal portion of any patent granted on the subject application follow:

I. If a Provisional Obviousness-Type Double Patenting Rejection Over A **Pending Application** was made, use:

The owner, _____, of _____ percent interest in the instant application hereby disclaims the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending **reference** Application Number _____, filed on _____, as such term is defined in 35 U.S.C. 154 and 173, and as the term of any patent granted on said **reference** application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending **reference** application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the **reference** application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

II. If an Obviousness-Type Double Patenting Rejection Over A **Prior Patent** was made, use:

The owner, _____, of _____ percent interest in the instant application hereby disclaims the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **reference patent** No. _____ as the term of said **reference patent** is defined in 35 U.S.C. 154 and 173, and as the term of said **reference patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **reference patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

Alternatively, Form PTO/SB/25 may be used for situation I, and Form PTO/SB/26 may be used for situation II; a copy of each form may be found at the end MPEP § 1490.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Outstanding obviousness-type double patenting ground of rejection of claims 11, 17-19, 22, 41 and 44-45 as being unpatentable over claims 1-6 of U.S. Patent No. 6,673,835 in view of ES 2095183 and DE 3431727 is hereby withdrawn in view of applicant's terminal disclaimer of 4/18/2009, which is effective only for U.S. Patent No. 6,673,835. As noted earlier in this Office action, applicant's terminal disclaimer is insufficient with respect to the later-filed copending applications.

Claims 11, 14, 16-19, 22, 41, 43, 45-50 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,080,783 in view of ES 2095183. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

Patented claims encompass applying a viscous composition to the nasal membrane to relieve symptoms of a common cold, wherein the composition contains ≥90 wt% carrier, 0.9-2 wt% zinc gluconate, and a thickener (e.g. glycerin) which permits zinc to readily diffuse through the thickener, and which dissolves into and permeates the nasal epithelial membrane, wherein the composition has a viscosity in the range of 5000 to 20,000 centipoise. See patented claims 1-5.

ES 2095183 discloses a drug delivery system composed of aqueous preparations that have a liquid form at room temperature but become gels at body temperature and adhere to the nasal mucosa (see the English abstract, HCAPLUS abstract 1997:283905). Less than 1% bioadhesive polymer such as hydroxypropyl cellulose and sodium chloride for isotonicity is disclosed (id.). Advantage of the gel intranasal delivery is controlled delivery (id.).

Instant claims differ from the patented claims in that the instant claims require:

- 75-99 wt% water
- the carrier to comprise "an agent to facilitate diffusion of zinc through mucous in the nasal passage

- specifically recite 0.000001-5 wt% thickener such as carrageenan, sugar, guar gum, hydroxycellulose, methylcellulose, hydroxyethylcellulose and other carbohydrates.

One of ordinary skill in the art would have recognized water as a suitable carrier for the invention of the patent claims of U.S. 6,080,783 because water is known to be a safe carrier for intranasal delivery of active ingredients (ES 2095183). Similarly, use of sodium chloride (applicant's diffusion facilitating agent) and small amount of same or similar bioadhesive polymer (thickening agent) are suggested by ES 2095183.

Applicant's claim 19 further requires a permeation enhancer. It is noted that applicant considers glycerol (i.e. glycerin) + water to constitute a permeation enhancer (specification page 16, line 5). Hence, since glycerin + water is already suggested, applicant's permeation enhancer is thereby suggested.

Applicant's claim 41 requires a system with an applicator. Such a system would have been obvious because the invention of the patented claims require applying the composition to the nasal epithelial membrane. Use of an applicator would have been obvious to apply to the nasal epithelial membrane.

Applicant's claim 48 requires 20-44 mM zinc ion in the gel composition. Such mM concentration indicates concentration per volume of a gel. Since the patented claims do not recite zinc concentration in such units, it is difficult to arrive at a comparative conversion. However, it must be noted that the patented claims require and suggest 0.9-2 wt% zinc gluconate (2% zinc gluconate can be calculated to about 44 mM zinc) in

a composition that contains similar or same carriers and thickening agents. Since substantially similar amounts of carriers and thickening agents are used with substantially similar amount of zinc salt at the same viscosity range, zinc concentration strength of the patented invention in terms of mM unit would also have been similar and obvious.

Therefore, one having ordinary skill in the art would have recognized the claimed invention as an obvious variation of the invention set forth in the claims of U.S. Patent 6,080,783.

Claims 11, 14, 16-19, 22, 41, 43, 45-50 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,365,624 in view of ES 2095183. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

Patented claims are directed to a composition for reducing a duration of a common cold comprising 90-99.1 wt% carrier (which can include 0.05-3 wt% glycerin), 0.9-2 wt% zinc gluconate, and a thickener (carbohydrate, carrageenan, sugar, guar gum, methylcellulose), wherein the composition has a viscosity greater than 5000 centipoise. Methanol can be included in an amount of 0.01-0.1 wt%. See patented claims 9-14. Application to the nasal membrane is claimed (claims 1-8). 15-40 mM zinc concentration is claimed (claim 4).

ES 2095183 discloses a drug delivery system composed of aqueous preparations that have a liquid form at room temperature but become gels at body temperature and adhere to the nasal mucosa (see the English abstract, HCAPLUS abstract 1997:283905). Less than 1% bioadhesive polymer such as hydroxypropyl cellulose and sodium chloride for isotonicity is disclosed (id.). Advantage of the gel intranasal delivery is controlled delivery (id.).

Instant claims differ from the patented claims in that the instant claims require:

- 75-99 wt% water
- the carrier to comprise "an agent to facilitate diffusion of zinc through mucous in the nasal passage
- specifically recite 0.000001-5 wt% thickener such as carrageenan, sugar, guar gum, hydroxycellulose, methylcellulose, hydroxyethylcellulose and other carbohydrates.

One of ordinary skill in the art would have recognized water as a suitable carrier for the invention of the patent claims of U.S. 6,365,624 because water is known to be a safe carrier for intranasal delivery of active ingredients (ES 2095183). Similarly, use of sodium chloride (applicant's diffusion facilitating agent) and small amount of same or similar thickening agent are claimed in the patented claims and suggested by ES 2095183.

Applicant's claim 19 further requires a permeation enhancer. It is noted that applicant considers glycerol (i.e. glycerin) + water to constitute a permeation enhancer

(specification page 16, line 5). Hence, since glycerin + water is already suggested, applicant's permeation enhancer is thereby suggested. Further, the patented composition can contain methanol, which would possess the function of enhancing permeation due to its solvent properties.

Applicant's claim 41 requires a system with an applicator. Such a system would have been obvious because the invention of the patented claims require applying the composition to the nasal epithelial membrane. Use of an applicator would have been obvious to apply to the nasal epithelial membrane.

Therefore, one having ordinary skill in the art would have recognized the claimed invention as an obvious variation of the invention set forth in the claims of U.S. Patent 6,365,624.

Claims 11, 14, 16-19, 22, 41, 43, 45-48 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 7,348,360 in view of ES 2095183. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

Patented claims encompass a gel composition for delivering zinc to a nasal membrane, the gel composition consisting of 0.185-2.8 wt% zinc gluconate, 90-99 wt% water, 0.05-5 wt% glycerin, 0.1-5 wt% thickener such as carrageenan, sugar, guar gum, methylcellulose, hydroxyethylcellulose and carbohydrate, up to 5 wt% of an agent that

facilitates the breakup and drying of mucous in the nose (e.g. sodium chloride), and up to 5 wt% of a permeation enhancer. See claims 1-10.

ES 2095183 discloses a drug delivery system composed of aqueous preparations that have a liquid form at room temperature but become gels at body temperature and adhere to the nasal mucosa (see the English abstract, HCAPLUS abstract 1997:283905). Less than 1% bioadhesive polymer such as hydroxypropyl cellulose and sodium chloride for isotonicity is disclosed (id.). Advantage of the gel intranasal delivery is controlled delivery (id.).

Instant claims are substantially similar to the patented claims except for broader scope of zinc and dependent claim specificity. However, all claims in this application are readable on zinc gluconate.

Applicant's claim 41 requires a system with an applicator. Such a system would have been obvious because the invention of the patented claims require applying the composition to the nasal epithelial membrane. Use of an applicator would have been obvious to apply to the nasal epithelial membrane.

Applicant's claim 48 requires 20-44 mM zinc ion in the gel composition. Such mM concentration indicates concentration per volume of a gel. Since the patented claims do not recite zinc concentration in such units, it is difficult to arrive at a comparative conversion. However, it must be noted that the patented claims require the same amount of a zinc salt, zinc gluconate (2% zinc gluconate can be calculated to about 44 mM zinc), in a composition that contains similar or same carriers, thickening

agents, and several other ingredients. Since substantially similar amounts of carriers, thickening agents, and other ingredients are used with the same amount of zinc salt, zinc concentration strength of the patented invention in terms of mM unit would also have been similar and obvious.

Therefore, one having ordinary skill in the art would have recognized the claimed invention as an obvious variation of the invention set forth in the claims of U.S. Patent 7,348,360.

Claims 11, 14, 16-19, 22, 41, 43 and 45-50 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the following copending applications in view of ES 2095183:

(1) claims 1-15 of copending Application No. 11/781,396;

(2) claims 1-20 of copending Application No. 11/748,668;

(3) claims 1-18 of copending Application No. 11/748,653; and

(4) claims 1-20 of copending Application No. 11/749,111.

Teachings of ES 2095183 were discussed above, and the discussion there is incorporated herein by reference.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the same ingredients with substantially the same or similar composition and viscosity feature are disclosed in the copending application claims. Water would have been obvious carrier/diluent in the invention of the copending

application claims. Note, "about" in both the instant claims and the copending claims, which render obvious the specific viscosity ranges claimed in this application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented. As noted earlier in this Office action, applicant's terminal disclaimer is insufficient with respect to the later-filed copending applications. Hence, these grounds of rejection must be maintained.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11, 16-19, 22, 41, 43, 45, 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eby, III (Re. 33,465, hereinafter referred to as "Eby") in view of ES 2095183, Pereswetoff-Morath et al. and HCAPLUS abstract 1994:638216, further in view of DE 3431727 (full English translation already of record).

Eby teaches reduction in the duration of common cold symptoms such as nasal drainage, nasal obstruction, sore throat, fever, cough, which are the result of upper respiratory infection (column 2, lines 57-64) by applying to the nasal mucosal membrane a zinc compound (column 2, lines 64-68). Nasal sprays, nasal drops, nasal ointments, nasal washes and nasal injections are taught (column 3, lines 3-7). Zinc gluconate is taught (column 3, line 24).

ES 2095183 discloses a drug delivery system composed of aqueous preparations that have a liquid form at room temperature but become gels at body temperature and adhere to the nasal mucosa (see the English abstract, HCAPLUS abstract 1997:283905). Less than 1% bioadhesive polymer such as hydroxypropyl cellulose and sodium chloride for isotonicity is disclosed (id.). Advantage of the gel intranasal delivery is controlled delivery (id.).

Pereswetoff-Morath et al. disclose some basic prior art knowledge concerning intranasal delivery of active agents (note, such prior art knowledge is not limited to delivery of insulin) –

- Prolonged contact time is known to increase absorption (page 206, right column, lines 1-8).
- Increased viscosity is correlated to slower clearance from the nasal cavity (page 206, right column, lines 8-12).
- Solutions that form a gel in situ in the nasal cavity when the temperature is raised have the advantage of being easier to administer (page 206, right column, lines 15-22)
- Various polymers have proven successful in promoting nasal drug absorption, and ethyl(hydroxyethyl)cellulose is one example of a polymer that can be formulated to form a gel in situ in the nasal cavity (page 206, see the entire paragraph that starts at the left column and ends at the right column).

HCAPLUS abstract 1994:638216 discloses that bioavailability of nasally applied drugs is reduced by nasal mucociliary clearance, so nasal solutions contain polymers as thickeners to prolong the time between drug and the mucosa. Methyl hydroxypropyl cellulose and gellan gum (polysaccharide, i.e. a carbohydrate) are known thickeners in solutions of drugs that are applied nasally. The gellan gum is advantageous in that its viscosity increases when physiological level of cations are present.

DE 3431727 discloses that nasally applied zinc gluconate for treating viral ailments such as the common cold is at a concentration of 0.1 to preferably 2% (page 3 of translation, claims 1-2; page 6 of translation, last paragraph).

Eby does not expressly disclose every claim limitation or feature recited in the instant claims. Discussion of each feature and suggestion from the cited prior art is set forth below.

"A composition for delivering an active substance to a nasal membrane":

Eby provides the motivation to deliver Zn gluconate nasally. Nasal sprays, nasal drops, nasal ointments, nasal washes and nasal injections are taught (column 3, lines 3-7).

"about" 0.185 to 2.8 wt% zinc gluconate, "about" 0.9 to 2 wt% ionizable zinc salt, "about" 4 to 60 mM zinc ion, "about" 20-44 mM zinc ion:

Although Eby does not expressly disclose these concentrations, Eby teaches the nasal administration of zinc to treat the symptoms of the common cold. DE 3431727 provides the motivation to nasally administer zinc gluconate for treating viral ailments such as the common cold at a concentration of 0.1 to 2% (page 3, claims 1-2; page 6,

last paragraph). 0.1% zinc gluconate calculates to about 2.2 mM and 2% zinc gluconate calculates to about 44 mM.

Motivation to select the drug delivery system of ES 2095183:

Eby discloses nasal sprays, drops, nasal ointments, but Eby does not provide a specific formulation disclosure for nasal administration. Hence, the ordinary skilled artisan would have looked to nasal delivery technology that was available before applicant's effective filing date. ES 2095183 teaches that its aqueous drug delivery preparation is a liquid at room temperature but gels at body temperature and adheres to the nasal mucosa, thereby providing controlled delivery of active drugs. The ordinary skilled artisan would have been motivated to formulate zinc gluconate as taught by ES 2095183 with the expectation that zinc gluconate would be conveniently administered as a liquid that gels in the nasal mucosa to provide controlled delivery of the zinc to treat the common cold. The ordinary skilled artisan would have been further motivated from Pereswetoff-Morath et al. and HCAPLUS abstract 1994:638216 that bioadhesives such as those utilized in ES 2095183 advantageously prolong the contact time between the mucosa and the delivered drug.

Agent to facilitate diffusion of the active substance through mucous in the nasal passage:

The drug delivery formulation of ES 2095813 contains sodium chloride to provide isotonicity.

Thickening agent, 0.000001 to 5 wt%: The drug delivery formulation of ES 2095813 contains bioadhesive polymers such as cellulose derivatives at an amount that

is less than 1%. The example on page 3, column 4, lines 35-49 of ES 2095183 discloses 0.2 g of hydroxypropylmethylcellulose in 100 ml of water, i.e. 0.2 wt%.

Hydroxyethylcellulose as the thickening agent: From the general bioadhesive teaching to the specific hydroxypropylcellulose exemplified by ES 2095813, hydroxyethylcellulose would have been an obvious modification since both cellulose derivatives are structurally similar cellulose ethers. Motivation to make the modification arises from the advantages of utilizing similar bioadhesive polymers to provide controlled delivery of the active substance.

Water being present at 75-99 wt%: Example on page 3, column 4, lines 35-49 of ES 2095183 discloses 12.15 g of ingredients in water to make up 100 ml. Even the English abstract of ES 2095183 shows weight amounts of other ingredients that would calculate to a water amount that is within applicant's claimed amount range. Therefore, such amount of water falls within applicant's water amount.

Permeation enhancer: The drug delivery formulation of ES 2095813 contains benzyl alcohol. An alcohol would provide solvent properties and would thus provide permeation enhancement.

A system for applying the composition to a nasal membrane:

Nothing more than an applicator and the composition is required in applicant's system, so a mere container and a means for applying the composition would meet this claim feature. One having ordinary skill in the art would have been motivated to provide

the composition in a container and then use some means to apply the gel to the route of administration. The "system" is thereby fairly suggested.

Viscosity of the composition is between 2,500 and 40,000 cp or 5,000 and 20,000 cp

First, it must be noted that a viscosity feature without specificity as to temperature is substantially meaningless. For example, a difference of mere 20°C can result in viscosity difference of more than five thousand fold[1]. Hence, the composition suggested by the prior art could and would have the claimed viscosity at some temperature, since viscosity varies with temperature.

Second, *and in the alternative*, it would have been recognized by the ordinary skilled artisan that the claimed viscosity, at room temperature, would have had the consistency and viscosity of common substances such as honey or mayonnaise[2]. Since Eby has taught that "method of application that does not maintain a sufficiently high level of zinc ions in the locus of treatment would not prevent continued viral replications" (column 2, lines 30-33), and the secondary references teach the advantage of polymers and thickeners such as those used by applicant to prolong the time an active agent remains in the intranasal locus, a level of viscosity such as the range now claimed in claims 49-50 would have been obvious because such viscosity range would have been expected to be beneficial in maintaining the zinc ion in the locus without substantially adverse runoff.

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[1] Macmillan Encyclopedia of Physics. See glycerin at 20°C and 40°C.
[2] www.popemixers.com/downloads/General_ViscosityTable.pdf. Retrieved from the Internet on 11/8/2006.

In sum, the ordinary skilled artisan would have been motivated to select the nasal delivery formulation of ES 2095183 to nasally deliver Eby's zinc gluconate to treat symptoms of the common cold because said nasal delivery formulation would have been expected to provide the advantages of controlled delivery and prolonged contact time in the mucosa. Inclusion and utilization of all other ingredients and features are fairly suggested as discussed above. Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

Applicant's arguments relative hereto, filed on 4/16/2009, have been given due consideration, but they were deemed unpersuasive.

Applicant argues again that there is no suggestion to combine the references to form the claimed invention. Applicant argues that Eby does not suggest looking at other nasal application technologies, and even if that were not the case, combination with ES 2095185 would still not have been suggested because Eby disclosed other technologies, which were stated as being ineffective.

The Examiner must disagree. Eby discloses that prior art formulations are ineffective because "natural circulation removes zinc ions from the locus of the treatment more rapidly than the low application rate of zinc ions by the dosage replaces them" (column 2, lines 20-26). Eby further discloses, "method of application that does

not maintain a sufficiently high level of zinc ions in the locus of treatment would not prevent continued viral replications (column 2, lines 30-33). Clearly, Eby suggests utilizing a nasal application technology that maintains the delivery of zinc ions at a high enough level to have an effect, which level is not removed in excess by the natural process. **Considering that nasal application is inherently susceptible to runoff problems**, Eby's teachings directly points to use of nasal application technology like the one taught by ES 2095183 (and also Pereswetoff-Morath), which would adhere to the nasal mucosa and provide controlled delivery of an active ingredient. One having ordinary skill in the art, at a time prior to applicant's effective filing date, would have recognized the advantage that such nasal application technology provides and would thus have found it obvious to use the same to deliver Eby's nasal active ingredient.

Applicant also argues that "Eby distinguished his invention over the intranasal compositions – stating that such compositions did not work and that his invention is an improvement over zinc-based nasal sprays." However, Eby expressly disclosed nasal ointments (column 3, line 7), which contradicts applicant's argument.

Applicant further criticizes Eby's disclosure for lack of any examples of a nasal composition and lack of an explanation of why or how his nasal compositions vary from those of the prior art. The Examiner cannot agree. Eby was clear in teaching that prior art zinc nasal sprays were ineffective because it did not maintain sufficient zinc ions in the locus of treatment (column 2, first full paragraph). Eby solved the problem in the art

by administering **to** nasal mucosal membranes by a manner that raises the concentration of zinc ions in virally infected areas (paragraph bridging columns 2-3):

> The invention disclosed and claimed is a method to reduce duration of common colds in humans as evinced by reduction of duration of 10 common cold symptoms defined as being: nasal drainage, nasal obstruction, headache, fever, myalgia, sneezing, sore throat, scratchy throat, cough and hoarseness with each symptom, when present, being a result of a viral upper respiratory infection. Such method involves administration of pharmaceutically acceptable zinc compounds topically applied to oral, pharyngeal and/or nasal mucosal membranes by a manner that raises the concentration of zinc ions in virally infected areas. Those concentrations

Eby clearly disclosed nasal ointments to the nasal mucosal membranes, which is readable on applicant's nasal gel (column 3, first paragraph):

are maintained for a period of time until all common cold symptoms are eliminated without [release] *relapse*. Means of application include, but are not limited to the following direct, indirect, carrier, and special means or any combination of means. Direct application of zinc compounds may be by nasal sprays, nasal drops, nasal ointments, nasal washes, nasal injections, packings, or indirectly through use of throat troches or lozenges, or through use of mouth washes or gargles, or through the use of inhalants or ointments applied to the nasal nares, the bridge of the nose, or the face or any combination of these and similar methods of application. Carriers such as dimethyl sulfoxide and other spe-

Applicant continues to argue that since Eby acknowledges and references other prior art available at the time that relates to nasal application and further notes that the methods in those references were ineffective, combination with ES 2095183 would not have been suggested.

The Examiner's position is that applicant is reading Eby too narrowly. The Examiner is forced to repeat himself. Eby discloses that prior art formulations are ineffective because "natural circulation removes zinc ions from the locus of the treatment more rapidly than the low application rate of zinc ions by the dosage replaces them" (column 2, lines 20-26). Eby further discloses, "method of application that does not maintain a sufficiently high level of zinc ions in the locus of treatment would not prevent continued viral replications (column 2, lines 30-33). Clearly, Eby suggests

utilizing a nasal application technology that maintains the delivery of zinc ions at a high enough level to have an effect, which level is not removed in excess by the natural process. **Considering that nasal application is inherently susceptible to runoff problems**, Eby's teachings (zinc ointment) directly points to use of nasal application technology like the one taught by ES 2095183 and acknowledged by Pereswetoff-Morath et al. In short, such delivery systems would make zinc more available and for longer period of time because zinc would not run off as much from the nasal membrane.

For these reasons, the claims must be rejected.

Claims 11, 16-19, 22, 41, 43, 45-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eby, III (Re. 33,465, hereinafter referred to as "Eby") in view of ES 2095183, Pereswetoff-Morath et al. and HCAPLUS abstract 1994:638216, further in view of DE 3431727 (full English translation already of record) and Dikstein (US 5,376,365).

This ground of rejection is substantially the same as the one before it. The same references are applied with the exception of Dikstein, which is new here. The purpose of this ground of rejection is to address claim 46, which was not included in the previous ground of rejection under section 103.

Teachings of all prior art references except for Dikstein were previously discussed above, and the discussion there is incorporated herein by reference. Also, obviousness of all claims except for claim 46 were also previously discussed above

based on previously discussed prior art references and their teachings, and the discussion there is likewise incorporated herein by reference in its entirety.

Applicant's claim 46 requires 0.000001-5 wt% glycerin in the gel composition of claim 11.

Dikstein teaches that "One of the results of administering aqueous viscous preparations is that **after evaporation of the water, an unpleasant crust is formed from the viscosity-forming agent"** (emphases added) (column 1, lines 21-24). Dikstein teaches overcoming this problem by providing gel-forming agent in the present of a strong moisturizer-humectant such as glycerin (column 1, lines 12, 30-35). Examples include 2.6 wt% glycerin (Example 1 on column 1).

With respect to applicant's claim 46, one having ordinary skill in the art would have found it obvious to add an amount of glycerin that is within the range claimed because glycerin would have been expected to aid in the unpleasant problem of crust forming in the nasal cavity after the gel dries off.

In sum, Eby suggests utilizing a nasal application technology that maintains the delivery of zinc ions at a high enough level to have an effect, which level is not removed in excess by the natural process**. Considering that nasal application is inherently susceptible to runoff problems**, Eby's teachings (zinc ointment) directly points to use of nasal application technology like the one taught by ES 2095183 and acknowledged by Pereswetoff-Morath et al. Such delivery systems would make zinc more available and for longer period of time because zinc would not run off as much from the nasal

membrane, and use of a moisturizing-humectant like glycerin would have been fairly suggested for addressing the problem of crust forming when water from the aqueous gel evaporates.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

For these reasons, all claims must be rejected again.

All grounds of rejection which have not been maintained herein from the previous Office action are withdrawn upon reconsideration and in view of applicant's amendments and remarks. In view of the examination of viscosity feature-reciting claims 49-50 both in this Office action and previous Office actions of 10/16/2008 and 4/1/2008, any restriction between the elected invention of record and a similar invention that positively recites a specific viscosity features is hereby withdrawn.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to John Pak whose telephone number is **(571)272-0620.** The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Johann Richter, can be reached on **(571)272-0646**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

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/John Pak/
Primary Examiner, Art Unit 1616